AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1-7. (Cancelled)

8. (New) A method of ion beam processing of a surface of a substrate, comprising:

positioning the substrate relative to an ion beam that is generated by an ion beam source;

partially processing a known property pattern of the surface of said substrate by said ion beam such that a new technologically defined property pattern is formed; and

adjusting a current geometric action pattern of said ion beam on said surface of said substrate as a function of the known property pattern and of the new technologically defined property pattern, and as a function of the method progress by at least one of modifying the beam characteristics or by pulsing the ion beam.

9. (New) A method according to claim 8, wherein said substrate and the ion beam source rotate relative to one another and/or are moved uniformly or non-uniformly linearly, in a circle, or in a technologically pre-specified direction.

10. (New) A method according to claim 8 or 9, wherein said ion beam is formed from at least two individual ion beams having respective beam characteristics which are controlled synchronously or independent of one another and/or are pulsed simultaneously or temporally offset from one another.

11. (New) A method according to claim 8 or 9, wherein an angle between a surface normal of said surface of said substrate to be processed and the axis of said ion beam striking said surface is modified.

12. (New) A method according to claim 1, wherein said ion beam source is a wide-beam ion source.

13. (New) A method according to claim 10, wherein an angle between a surface normal of said surface of said substrate to be processed and the axis of said ion beam striking said surface is modified.

14. (New) A method according to claim 8 or 9, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

15. (New) A method according to claim 10, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

16. (New) A method according to claim 11, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

17. (New) A method according to claim 13, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

18. (New) An apparatus for ion beam processing of a surface of a substrate, comprising:

a substrate support for mounting at least one substrate presenting said surface, said substrate support being disposed within a vacuum chamber and being movable in a Y axis and in an X axis; and

an ion beam source being mounted in a wall of said vacuum chamber such that an axis of an ion beam from said ion beam source is perpendicular to said surface of the substrate to be processed in a Z axis or is positionable in an axis that is inclined to said Z axis, such that a distance from said ion beam source to said surface of said substrate to be processed is fixed or variable.

19. (New) An apparatus according to claim 18, wherein said ion beam source is formed from at least two individual ion beam sources, the individual ion beams of which form a common current geometric action pattern of said ion beam on said surface of the substrate.

20. (New) An apparatus according to claim 18, wherein said ion beam source is a wide-beam ion source.